Private Sector Outreach Statistics

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Science and Technology
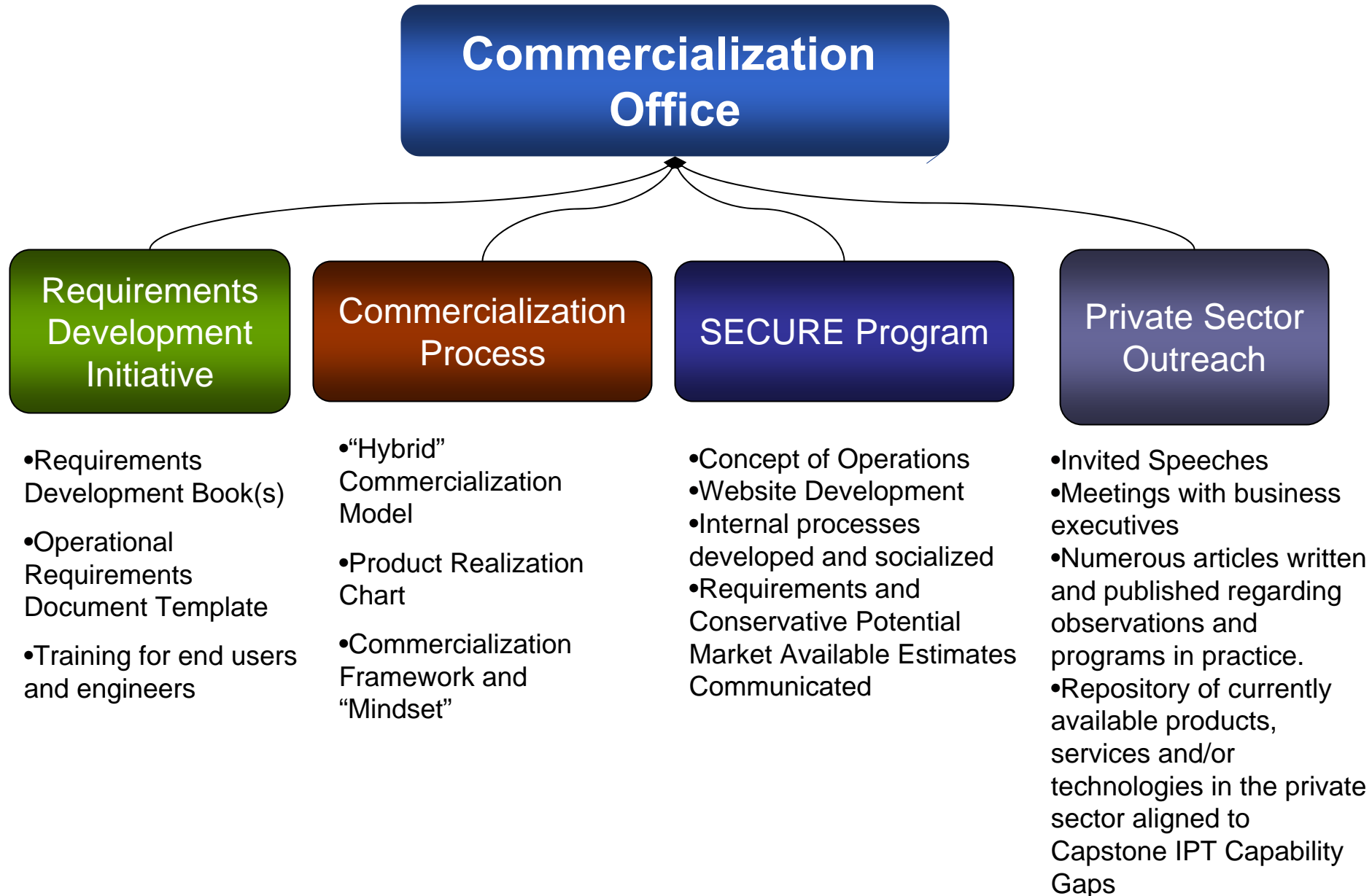Email: Thomas.Cellucci@dhs.gov

Discussion Guide

- Overview of Private Sector Outreach Activities
- Process of Gathering Data/Information
- Breakdown of Organization Types
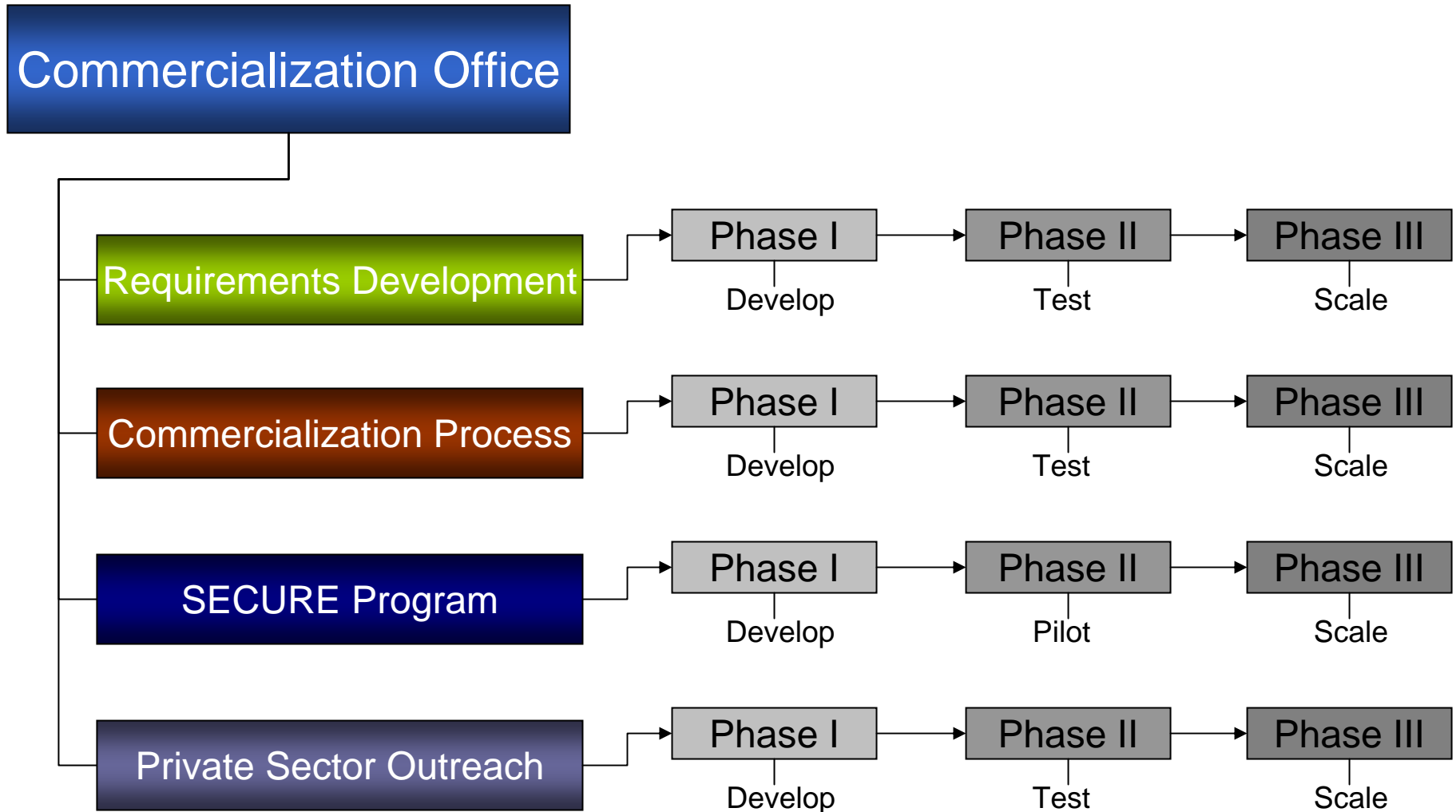- Statistical Information Review
- Summary

Homeland
Security

Commercialization Office: Major Activities

Commercialization Office

Requirements Development Initiative

- Requirements Development Book(s)
- Operational Requirements Document Template
- Training for end users and engineers

Commercialization Process

- "Hybrid" Commercialization Model
- Product Realization Chart
- Commercialization Framework and "Mindset"

SECURE Program

- Concept of Operations
- Website Development
- Internal processes developed and socialized
- Requirements and Conservative Potential Market Available Estimates Communicated

Private Sector Outreach

- Invited Speeches
- Meetings with business executives
- Numerous articles written and published regarding observations and programs in practice.
- Repository of currently available products, services and/or technologies in the private sector aligned to Capstone IPT Capability Gaps

Roll Out of Initiatives

Commercialization Office

Requirements Development

Phase I	Phase II	Phase III
Develop	Test	Scale

Commercialization Process

Phase I	Phase II	Phase III
Develop	Test	Scale

SECURE Program

Phase I	Phase II	Phase III
Develop	Pilot	Scale

Private Sector Outreach

Phase I	Phase II	Phase III
Develop	Test	Scale

- Continued Feedback from Users (DHS, First Responders, Private Sector)
- Test/Pilot & Refine (Iterative Process)
- Work "Bottom-Up" and "Top-Down" at DHS, FR Communities and PS

Integrated Marketing Strategy

Requirements Development
- Articles/Books
- www.DHS.gov
- DHS Online intranet
- Invited Briefs
- Trade Shows / Conferences

Commercialization Process
- Articles/Books
- www.DHS.gov
- DHS Online intranet
- Invited Briefs
- Trade Shows / Conferences

SECURE Program
- Articles/Books
- www.DHS.gov
- DHS Online intranet
- Invited Briefs
- Trade Shows / Conferences
- Television Appearances

Private Sector Outreach
- Articles
- www.DHS.gov
- Invited Briefs
- Trade Shows / Conferences
- Full Response Package
- Statistical Analysis (On-going)

- Continual Feedback from Private Sector (including VCs and Angel Investors)

Commercialization Process

PHASE I — Capstone IPT

Assess Capability Gap

Formulate EHCs

CG/EHC

II — Sponsor and S&T

Develop Operational Requirements & CONOPS

Perform Technology/System Feasibility Study

ORDs
System Studies

III — Sponsor and S&T

Technology Scan/ Market Survey

Publish ORD, System Studies & PAM on website
Mkt. Comm./PR Efforts

Responses from Private Industry

Outreach Program Activities

IV — Sponsor and S&T

Assess & Choose Strategic Private Sector Partners

Technology Transfer/ Grants (if required)

Executed Agreement with Private Sector and DHS

V

New COTS product marketed by Private Sector with DHS support:
- SAFETY Act
- Standards
- Public Relations
- Marketing Communications

> "Commercialization" – The process of developing markets and producing and delivering products or services for sale.

Legend:
EHC – Enabling Homeland Capability
CG – Capability Gap
ORD – Operational Requirements Document
CONOPS – Concept of Operations
PAM – Potential Available Market
COTS – Commercial Off The Shelf

Homeland Security

Source: Senior Executive Brief to Secretary Chertoff, Deputy Secretary Schneider and Leaders of G-7

Contact with the Private Sector

Initial Contact with Private Sector*

Private Sector requests more information

"Full Response Package" sent to requestors, usually within same day

Company Overview and Marketing Materials Received and communicated through S&T via Shared Drive

Invited Speeches/Presentations
Congressional Referrals
Conference Attendance
Seminar Hosting
Published Articles
Word of Mouth
DHS Website

- "Opportunities for the Private Sector"
- *Developing Operational Requirements*
- "High Priority Technology Needs"
- SECURE Program CONOPS
- Example Company Overview Document
- Operational Requirements Document Template

*Private Sector includes Venture Capitalist and Angel Investor Communities

Private Sector Overviews and Materials are Communicated throughout DHS

• Private Sector entities may voluntarily submit company overviews and marketing materials that outline products/technologies/services aligned with DHS capability gaps/needs.

• DHS includes submitted information on products/technologies/services in a detailed spreadsheet communicated through DHS for review and consideration by Program Managers (PMs), Transition Managers (TMs) and other DHS stakeholders.

• DHS analyzes correlation between database of products/technologies/services submitted by Private Sector entities with DHS-generated Operational Requirements Documents (ORDs) posted to SECURE Program website.

• SECURE Program leveraged for review of products/technologies/services aligned to posted ORDs in an open and freely competitive manner.

"Working with DHS": Benefits of the SECURE Program

Taxpayers	Private Sector	Public Sector
1. Citizens are better protected by DHS personnel using mission critical products	1.Save significant time and money on market and business development activities	1. Improved understanding and communication of needs
2. Tax savings realized through Private Sector investment in DHS	2. Firms can genuinely contribute to the security of the Nation	2. Cost-effective and rapid product development process saves resources
3. Positive economic growth for American economy	3. Successful products share in the "imprimatur of DHS"; providing assurance that products really work	3. Monies can be allocated to perform greater number of essential tasks
4. Possible product "spin-offs" can aid other commercial markets	4. Significant business opportunities with sizeable DHS and DHS ancillary markets	4. End users receive products aligned to specific needs
5. Customers ultimately benefit from COTS produced within the Free Market System – more cost effective and efficient product development	5. Commercialization opportunities for small, medium and large business	5. End users can make informed purchasing decisions with tight budgets

Product Realization Chart

DHS S&T Portfolio	N/A	Basic Research			Innovation and Transition					
Technology Phase	**Needs Assessment**	**Science**			**Technology Development**			**Product Development**		
Technology Readiness Level (TRL)	N/A	**TRL 1 – TRL 3**			**TRL 4 – TRL 6**			**TRL 7 – TRL 9**		

Key Objectives

N/A
- Identify S&T capability gaps (mission needs) requiring material solutions.
- Preliminary operational requirements are developed.
- Market survey.
- Technology scan.
- Assess technology-based solutions to address gaps.
- Develop rough order-of-magnitude (ROM) estimates of project cost and schedule.
- Investigate the value proposition of a product feature.
- Establish technical objectives and milestones.
- Conduct preliminary IP review.
- Ensure the qualification of tools, materials, processes, and suppliers as required.
- Provide a preliminary production plan.
- Develop preliminary marketing objectives and milestones.
- Initiation of Congressional Appropriations Memo, Technology Transition Agreements (TTA), Program Descriptions (Research and Innovation), and Feasibility Studies lead to Program and Budget Execution.
- List other objectives when defined.

TRL 1
- A program sponsor and end-users / customers have been identified.
- Mission Needs Statement has been developed.
- Communication with end-users and customers has been initiated.
- Preliminary operational requirements have been defined.
- Program Management Vision has been developed.
- A Feasibility Study White Paper has been developed and accepted. (TRL1 and 2)
- A threat, vulnerability, or gap has been identified.
- Initial risks have been identified.
- Develop and update the preliminary product plan.
- List other objectives when defined.

TRL 2
- End-user is involved in concept and requirements development.
- An empirical or theoretical design solution has been identified.
- Analytical studies to confirm the basic principles of the technology have been developed.
- Operational requirements analysis has been conducted; Operational requirements are applied to Functional Requirements. (TRL 2 and 3)
- System concept(s) / architecture have been assessed.
- Program Risk Assessment has been conducted; Risk Management Plan has been developed. (TRL2 and 3)
- Program Cost Analysis has been completed and updated. (TRL 2 and 3)
- Preliminary Security Assessment has been conducted.
- Develop a Technology Roadmap.
- Refine the market assessment and technology scan.
- List other objectives when defined.

TRL 3
- Supplemental and alternate technologies throughout DHS S&T have been surveyed.
- Technology's physical validity has been proven in laboratory experiments.
- Program Management Plan (PMP) has been developed.
- Systems Engineering Management Plan (SEMP) draft.
- Proof of Concept Plan has been developed.
- Manufacturing / production strategy has been developed.
- Develop Quality Control Plan to include standards conformance, reliability testing, etc.
- Develop Marketing Plan to include market size and research.
- List other objectives when defined.

TRL 4
- All required technology components are integrated for Proof of Concept.
- Proof of Concept is conducted.
- IPT has been briefed on progress of the technology's development.
- The customer has been briefed on the Proof of Concept results.
- Functional Requirements Document has been finalized.
- SEMP has been finalized and updated. (TRL 4, 5, & 6)
- TEMP has been completed and updated. (TRL 4, 5, & 6)
- Configuration Management Plan exists.
- PMP has been updated. (TRL 4, 5, and 6)
- Risk Management Plan is updated. (TRL 4, 5, and 6)
- Program Cost Analysis is updated. (TRL 4, 5, and 6)
- Quality Assurance Plan exists.
- Program Transition Manager is engaged in transition planning.
- List other objectives when defined.

TRL 5
- CONOPS and ORD developed.
- Security Assessment is updated.
- OMB 300 and Acquisition Plan have been completed (if required).
- IPT has certified readiness for the transition of the Technology.
- Program Transition Manager has assisted in transition documentation development.
- Technology scan and market survey. (ongoing)
- Analysis of Alternatives is developed and updated. (TRL 5 & 6)
- Entry Criteria Checklist is completed and delivered to the TM.
- PDD has been created, approved, and signed. (TRL 5 & 6)
- Director has approved the transition.
- List other objectives when defined.

TRL 6
Germane to both Acquisition and Commercialization
- Execute a preliminary Technology Transition Agreement (TTA), or Technology Commercialization Agreement (TCA) as applicable.
- Successful T&E in a simulated operational environment has been conducted.
- End user / customer has been briefed on the results of T&E.
- Initial Security Guidelines have been developed.
- Draft Program Assessment Rating Tool (PART) plan exists, if required.
- National Environmental Policy Act (NEPA) plan / assessment, if required.
- Interoperability Assessment.
- List other objectives when defined.

Specific to Commercialization
- Finalize Manufacturing Plan.
- Finalize engineering documentation.
- Update Marketing Plan.
- Develop and implement a test plan for quality control.
- List other objectives when defined.

TRL 7
Germane to both Acquisition and Commercialization
- S&T and the end-user / customer have begun to develop final transition planning document; Transition Plan has been developed. (TRL 7 and 8)
- Technology has been successfully demonstrated in an operational environment. (TRL 7 and 8)
- Updates (if required) have been made to the Operational and / or Functional Requirements Document.
- Risk Management Plan, Program Cost Analysis and PMP have been updated (as needed).
- Strategic Program Planning (e.g., Balanced Scorecard) has been conducted.
- Operations and Maintenance Manual has been completed / updated.
- Security Manual has been developed.
- Interoperability has been demonstrated.
- Management Directives (MD) have been reviewed to assure compliance.
- List other objectives when defined.

Specific to Commercialization
- IP Protection and Licensing.
- Prepare sales release package.
- Verify and update quality control requirements.
- List other objectives when defined.

TRL 8
Germane to both Acquisition and Commercialization
- Technology components are form, fit, and function compatible with an operational system.
- Technology production has been addressed and planned by DHS and the end-user / customer.
- Training Plan has been developed and implemented. (TRL 8 and 9)
- Operational Test Report has been completed.
- Limited User Test (LUT) Plan has been developed.
- List other objectives when defined.

TRL 9
Germane to both Acquisition and Commercialization
- All critical program documentation has been completed.
- Planning is underway for the integration of the next generation technology into the existing program components.
- End-user fully demonstrates the technology in CONOPS.
- Lessons Learned completed.
- After Action Review completed.
- Sustainment Plan is completed.
- List other objectives when defined.

Specific to Commercialization
- Finalize quality plan.
- Finalize marketing plan.
- Finalize manufacturing and assembly routines.
- List other objectives when defined.

Key Deliverables

N/A
- Needs Assessment / Requirements Development.
- Preliminary market assessment and technology scan.
- Congressional Appropriations Memo, Technology Transition Agreements, Program Descriptions (Research and Innovation), and Feasibility Studies lead to Program and Budget Execution.
- Preliminary product plan that assesses features, benefits, and risk.
- Initial plan for marketing, production, and quality control.
- List other deliverables when defined.

TRL 1
- Mission Needs Statement.
- Feasibility Study.
- Program Management Vision, or Description of Leap-ahead Capability.
- Written report of findings and recommendations (preliminary product plan).
- Feasibility Review meeting.
- List other deliverables when defined.

TRL 2
- Preliminary Operational Requirements Document (end-user / customer validation).
- Program Cost Analysis (updated). (TRL 2 and 3)
- Program Risk Assessment (technology, schedule, etc.); Risk Management Plan (TRL 2 and 3)
- Preliminary Security Assessment.
- Functional Requirements (draft). (TRL 3)
- Preliminary product plans (approved and ongoing).
- New Technology roadmaps (approved for further development and implementation).
- Updated market assessment and technology scan.
- List other deliverables when defined.

TRL 3
- Systems Engineering Management Plan (SEMP) draft.
- Proof of Concept Plan.
- Program Management Plan (PMP) draft.
- End-user / Customer Status Review.
- Detailed product and marketing plan.
- Quality control plan.
- Optimization Review meeting.
- List other deliverables when defined.

TRL 4
- Proof of Concept Report.
- Functional Requirements Document.
- SEMP (TRL 4, 5, and 6)
- TEMP (TRL 4, 5, and 6)
- Quality Assurance Plan.
- Configuration Plan Management.
- PMP (updated). (TRL 4, 5, and 6)
- Risk Management Plan (updated). (TRL 4, 5, and 6)
- Program Cost Analysis (updated). (TRL 4, 5, and 6)
- End-user / Customer Status Review.
- List other deliverables when defined.

TRL 5
- CONOPS and ORD.
- Security Assessment (updated).
- Program Definition Document (PDD).
- OMB 300 Capital Asset Plan.
- Acquisition Plan.
- Entry Criteria Checklist.
- Analysis of Alternatives. (TRL 5 and 6)
- List other deliverables when defined.

TRL 6
Germane to both Acquisition and Commercialization
- Technology Transition Agreement (TTA), or Technology Commercialization Agreement (TCA) as applicable.
- Initial Security Guidelines.
- Draft Program Assessment Rating Tool (PART) plan, if required.
- National Environmental Policy Act (NEPA) initial assessment, if required.
- Interoperability Assessment.
- List other deliverables when defined.

Specific to Commercialization
- Engineering documentation package release and manufacturing plan.
- Updated marketing plan.
- Test plan for quality control.
- Development Phase Review meeting.
- List other deliverables when defined.

TRL 7
Germane to both Acquisition and Commercialization
- Transition Plan (draft).
- Operational and Functional Requirements Documentation (updated).
- Risk Management Plan (updated).
- Program Cost Analysis (updated).
- PMP (updated).
- Strategic Program Planning Documentation (if conducted).
- Operations and Maintenance Manual.
- Security Manual.
- Finalized Interoperability Assurance Report. (TRL 7 and 6)
- Applicable Management Directives (MD), if required. (TRL 7)
- List other deliverables when defined.

Specific to Commercialization
- IP Protection and Licensing.
- Manufacturing and sales plan release package is to be distributed.
- Pilot Phase Review meeting.
- List other deliverables when defined.

TRL 8
Germane to both Acquisition and Commercialization
- Limited User Test (LUT) Plan.
- Deployment or Transition Plan.
- Training Plan.
- Operational Test Report.
- Customer Acceptance Document.
- Initial Systems-level Metrics Assessment.
- List other deliverables when defined.

Specific to Commercialization
- Demonstrate that a defect-free product can be manufactured on schedule and at a cost consistent with the target price points.
- List other deliverables when defined.

TRL 9
Germane to both Acquisition and Commercialization
- Customer Feedback.
- Lessons-learned.
- After-action Review.
- Sustainment Plan is completed (a. Spiral Development Assessment, b. Preplanned Product Improvement, c. Emerging Threat(s) Assessment, d. Technology Refresh / Insertion, e. Quality Assurance / Metrics Report, f. Risk Management Reassessment).
- List other deliverables when defined.

Specific to Commercialization
- Finalized product plan sales release package is to be distributed.
- Sales Release Phase Review meeting.
- Execution of the acceptance, shipment, and after-sales support of the new product.
- List other deliverables when defined.

Management Review

N/A
- STIC review meeting to ensure exit criteria / deliverables are met.
- EOC review and approval to move onto the next phase.
- Corporate review meeting of value proposition and product overview.
- Results and follow up actions.

TRL 1
- STIC review meeting to ensure exit criteria / deliverables are met (incorporate S&T Director of Research).
- Corporate review meeting of the preliminary product plan.
- Feasibility Review meeting.
- Results and follow up actions.

TRL 2
- STIC review meeting to ensure exit criteria / deliverables are met (incorporate S&T Director of Research).
- Corporate review meeting to approve preliminary product plan and technology roadmap.
- Results and follow up actions.

TRL 3
- STIC review meeting to ensure exit criteria / deliverables are met (incorporate S&T Director of Research).
- EOC review and approval to move onto the next phase.
- Optimization Review meeting.
- Results and follow up actions.

TRL 4
- STIC review meeting to ensure exit criteria / deliverables are met (incorporate S&T Director of Innovation, or Transition).
- Analysis of the engineering and manufacturing plan.
- Results and follow up actions.

TRL 5
- STIC review meeting to ensure exit criteria / deliverables are met (incorporate S&T Director of Innovation, or Transition).
- EOC review and approval to move onto the next phase.
- Results and follow up actions.

TRL 6
- STIC review meeting to ensure exit criteria / deliverables are met (incorporate S&T Director of Innovation, or Transition).
- Analysis of the engineering and manufacturing plan.
- Results and follow up actions.

TRL 7
- STIC review meeting to ensure exit criteria / deliverables are met (incorporate S&T Director of Transition).
- Corporate review of the manufacturing release package.
- Development Phase review meeting.
- Comprehensive analysis of the engineering and manufacturing plan.
- Results and follow up actions.

TRL 8
- STIC review meeting to ensure exit criteria / deliverables are met (incorporate S&T Director of Transition).
- Analysis and review of the manufacturing plan.
- Pilot Phase review meeting.
- Results and follow up actions.

TRL 9
- S&T Director (of Transition)
- EOC review and approval to move onto the next phase / transition.
- Corporate review of the finalized product plan and sales release package.
- Sales Release Phase Review meeting.

SECURE PROGRAM →

DHS S&T Portfolio Perspective

Type of Project or Program		TRL	Product Maturity	Transition Target	Customer Agreement
Basic Research Project		1-3	Emerging technology	Advanced Research or Innovation	None
Innovation Project	Homeland Innovative Prototypical Solution (HIPS) Project	3-7	System prototype (high-risk game-changing development)	Acquisition Program	None
Innovation Project	High-Impact Technology Solution (HITS) Project	3-7	Mature technology (high-risk game-changing development)	Acquisition Program	None
Transition Project	Advanced Research Project	3-6	Mature technology (low/medium-risk development)	Acquisition Program	Technology Transition Agreement (TTA) or Technology Commercialization Agreement (TCA)
Transition Project	System Development Project/Acquisition	6-9	End-user system (fully supportable and deployable, developed by a prime contractor)	Captive users in DHS Sponsor's organization	Technology Transition Agreement (TTA) or Technology Commercialization Agreement (TCA)
Transition Project	Technology Commercialization Project	6-9	COTS product (fully supported and marketed, developed by a private-sector licensee)	State/Local end users via acquisition, procurement, and grants activities	Technology Transition Agreement (TTA) or Technology Commercialization Agreement (TCA)
Operations Program		-	Service	Customers in Federal Agencies and private sector	Service Level Agreement (agreements are only between Federal entities)

Private Sector Company Database

• Professional, service-oriented outreach to Private Sector has resulted in positive feedback. Response rate varies between 30-40%*.

• Company overviews provide brief outlines of an organization's products, technologies and/or services <u>aligned</u> to DHS capability gaps/needs.

• Database of company overview documents is accessible by DHS-S&T personnel on S&T shared drive.

• Periodically updated overview briefs are available to entire Department on DHS Online intranet.

* 30-40% is the response rate range of organizations that express interest in Commercialization programs and return a detailed company overview package to DHS-S&T Commercialization Office.

Overview of Statistical Information

• There are well over 250 organizations (with more than 1,400 technologies/products/services) aligned to individual capability gaps generated in Capstone IPT process.

• Commercialization Office works with an assortment of small, medium and large companies (54% of the company overviews have been submitted by small companies).

• Aligned company information and "core competencies" versus the needs of a given DHS Operating Component; company information was aligned/distributed evenly across the 7 DHS Operating Components.

• Aligned products/technologies/services of a given company portfolio versus individual Capstone IPT capability gap(s); company information was aligned closely to Information Sharing (26%), Border Security (12%) and Cyber Security (11%) Capstone IPTs.

Commercialization Office
Company Overviews Received
Sorted by Company Size

Count of Company Size

| Large >$50M Revenue | Medium $20M - $50M Revenue | Small <$20M Revenue |
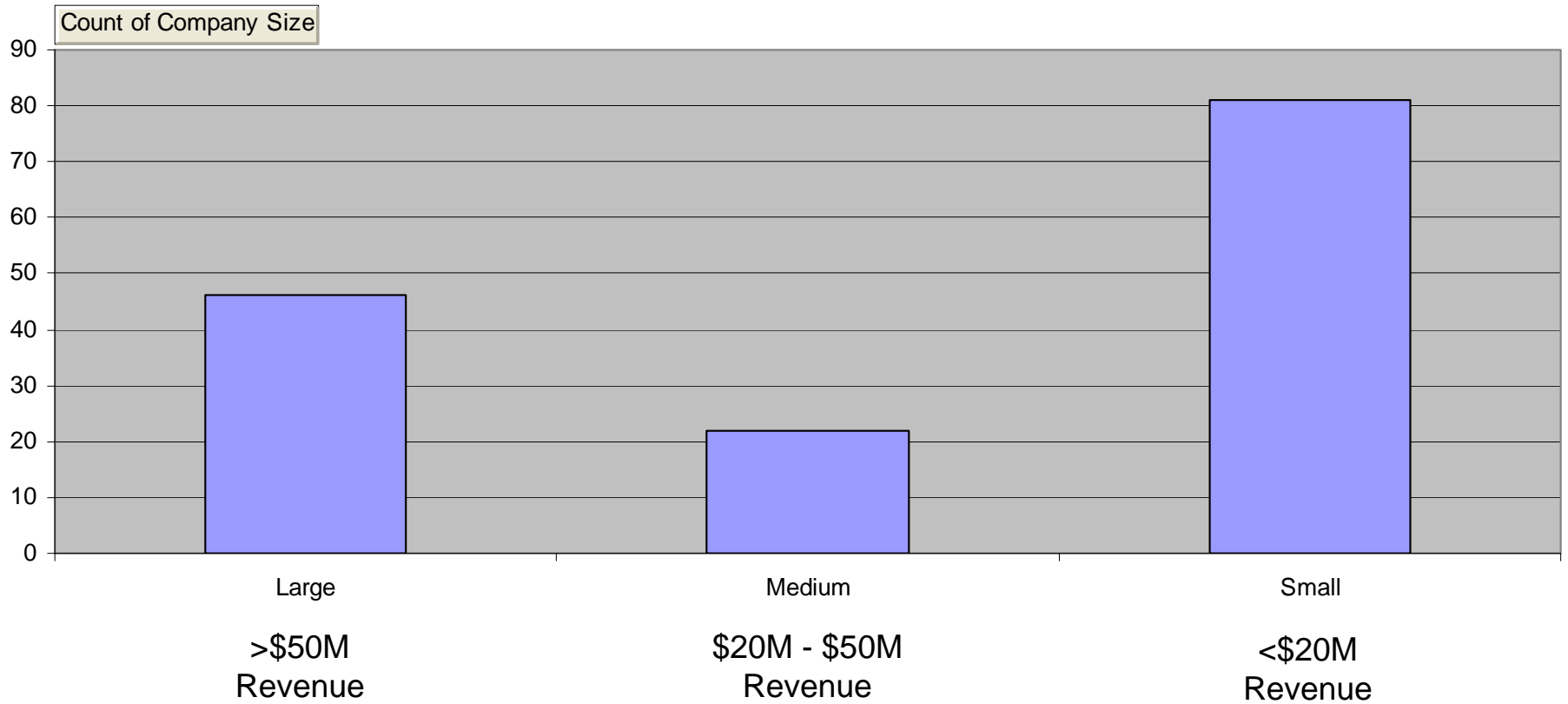
Commercialization Office
Company Overviews Possessing Potential Relevance to DHS Operating Components
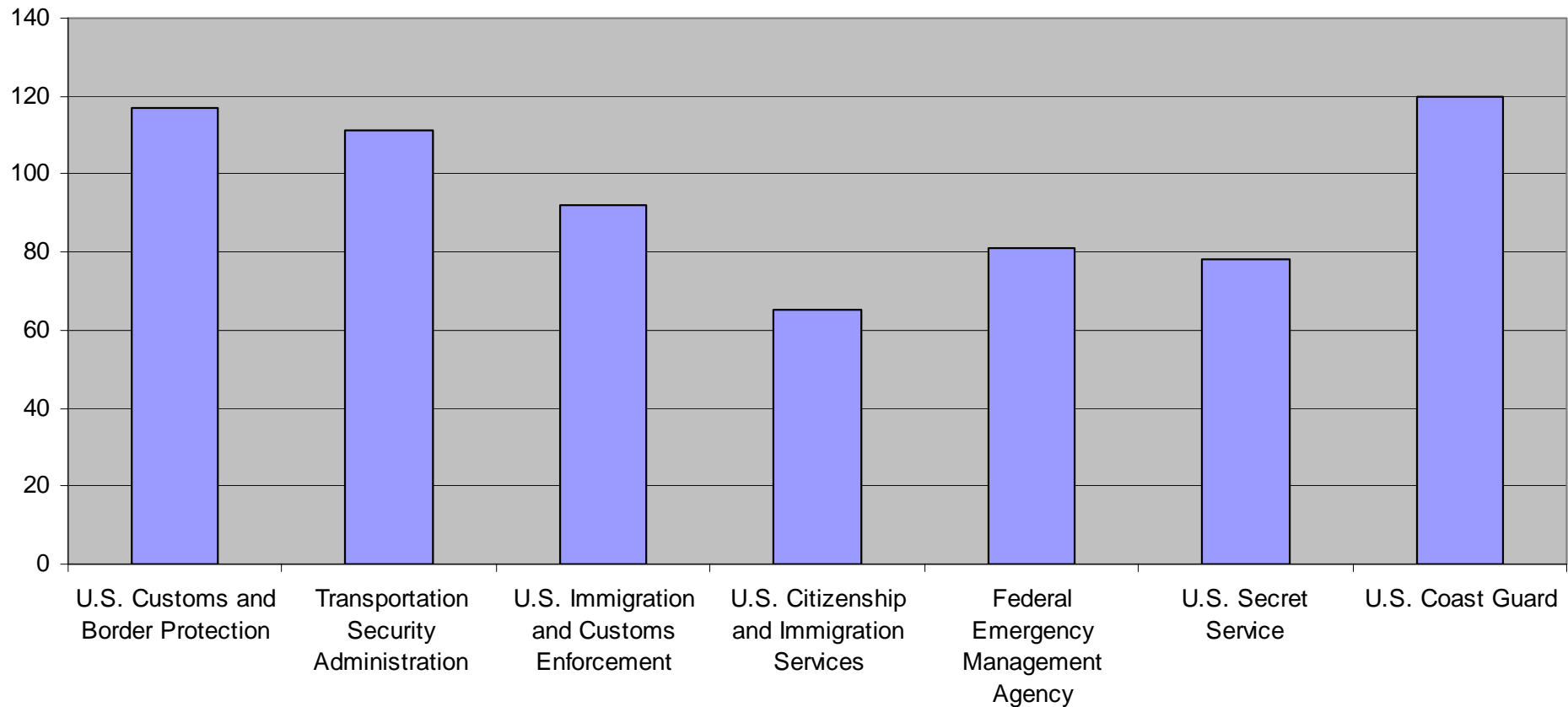
Note: When a product is aligned to multiple needs within a given Capstone IPT or across multiple Capstone IPTs, or when a company shows potential relevance to multiple DHS Operating Components that company/product will be counted multiple times. This follows for all statistics presented in this brief.

Commercialization Office
Technologies/Products/Services
Aligned to Capstone IPTs
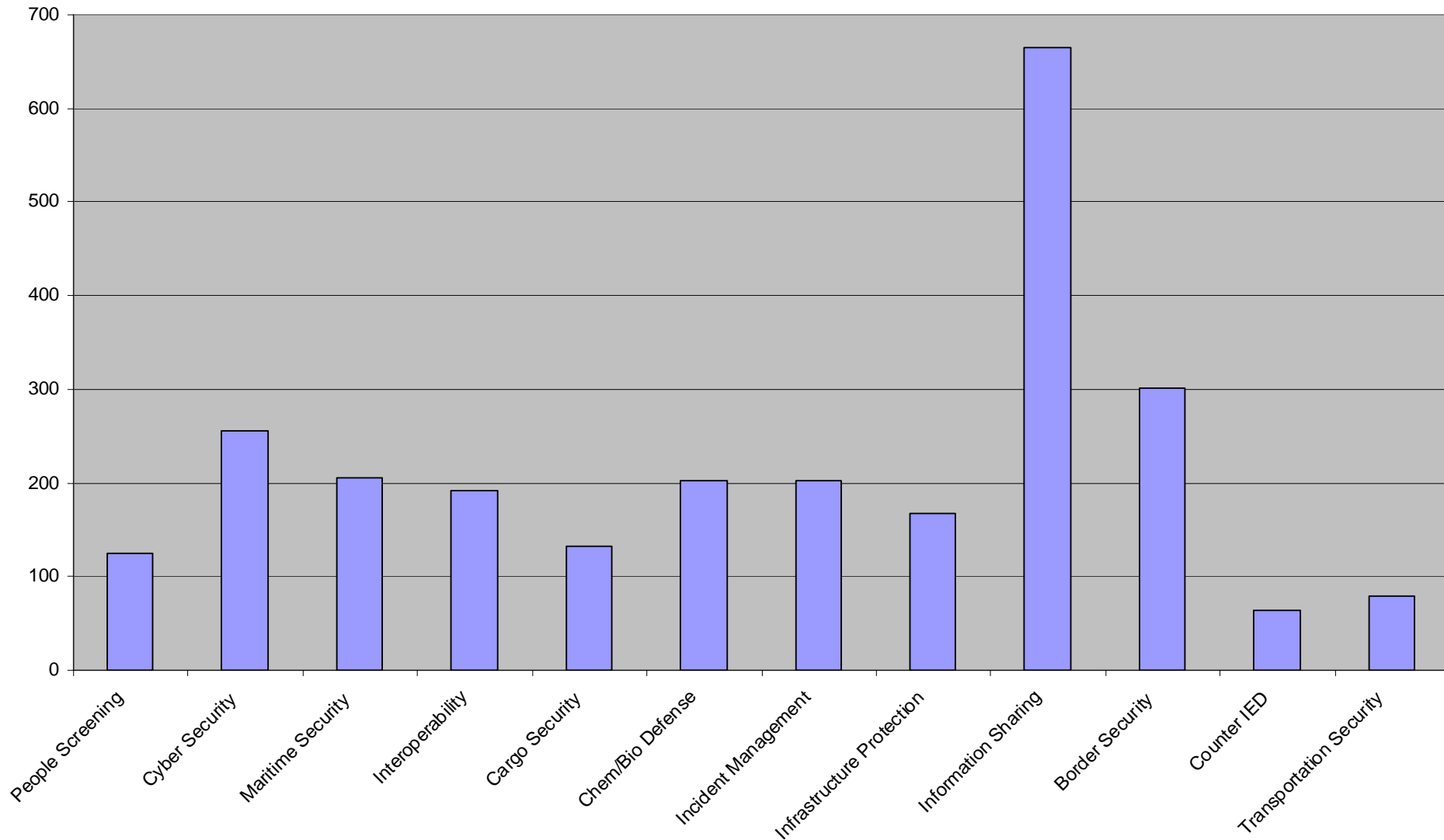
Commercialization Office
Technologies/Products/Services
Sorted by People Screening (PS) Capability Gaps
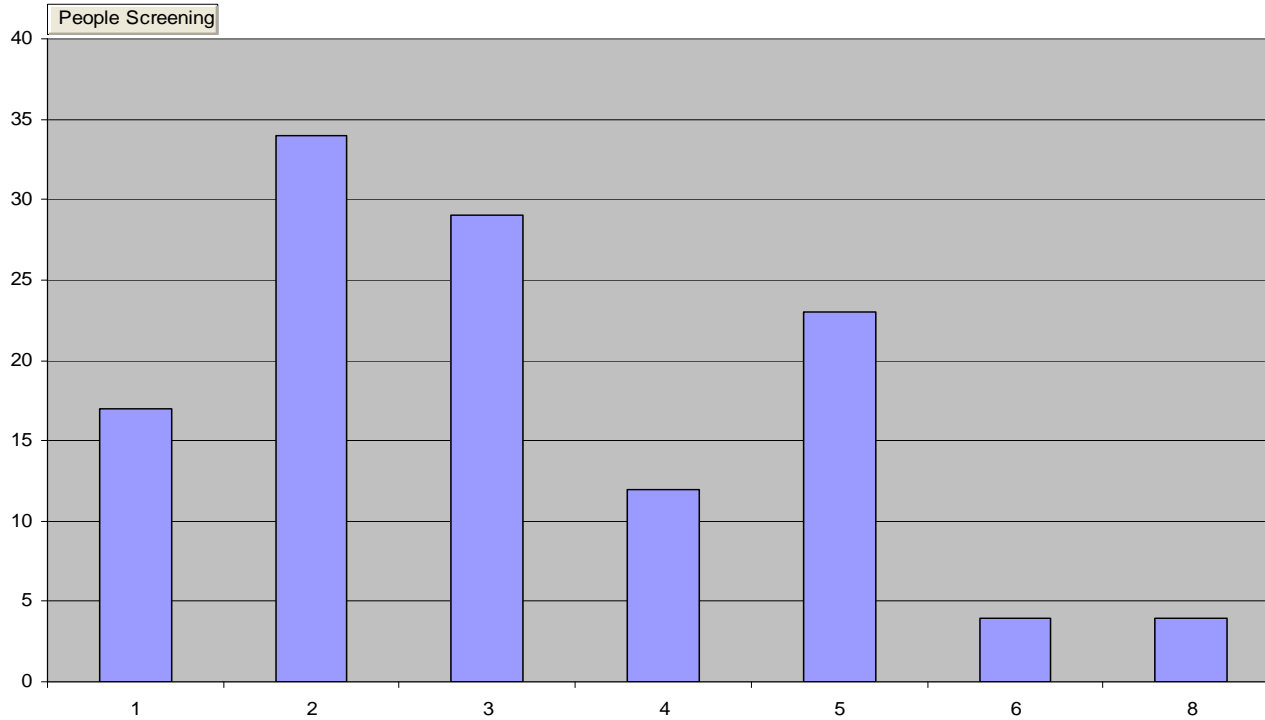
People Screening (PS)
1. Systematic collection and analysis of information related to understanding terrorist group intent to engage in violence
2. Non-invasive monitoring: Identifying and tracking unknown or potential threats from individuals at key checkpoints. Real-time detection of deception or hostile intent through integrated system of human and machine methods
3. Capability in real-time for positive verification of individual's identity utilizing multiple biometrics
4. Capability for secure, non-contact electronic credentials; contactless readers or remote interrogation technologies for electronic credentials
5. Mobile biometrics screening capabilities, to include hand-held, wireless, and secure devices
6. High-speed, high-fidelity ten-print capture capability
7. Rapid DNA testing to verify family relationships during interviews for the disposition of benefits
8. Remote, standoff biometrics detection for identifying individuals at a distance

Commercialization Office
Technologies/Products/Services
## Sorted by Cyber Security (CyS) Capability Gaps
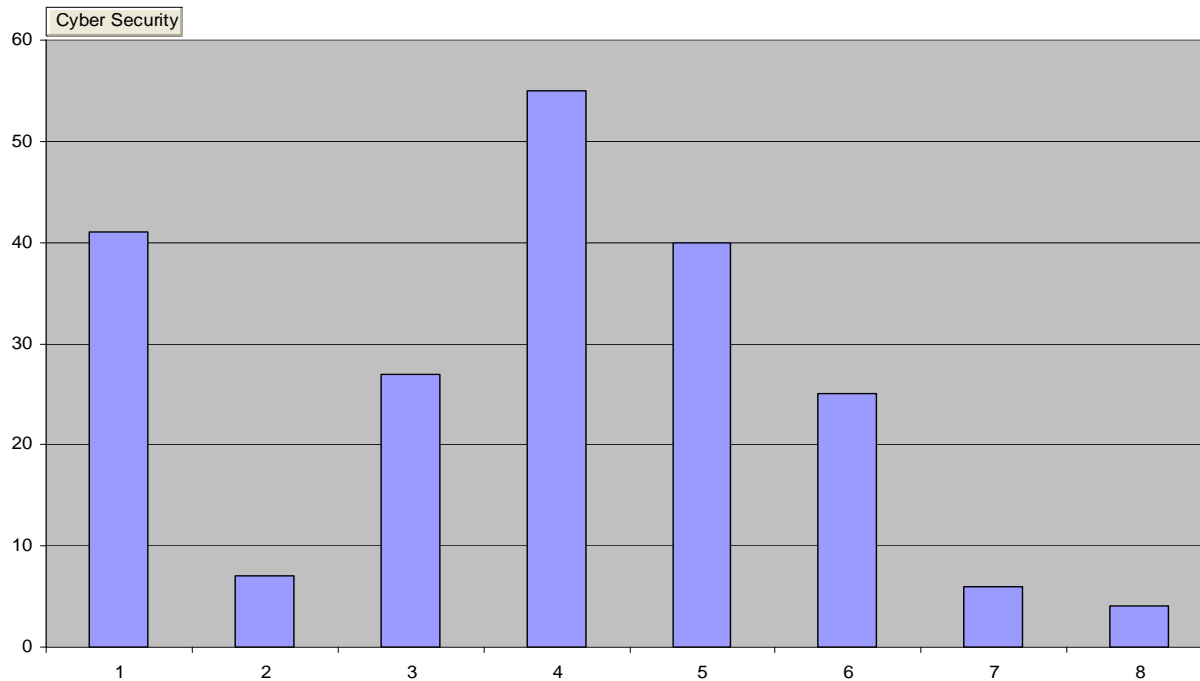
Cyber Security (CyS)
1. Secure internet protocols including standard security methods
2. Improved capability to model the efforts of cyber attacks and understanding of internet topography
3. Comprehensive next-generation network models
4. Composable and scalable secure systems
5. Technologies and standards for managing identities, rights, and authorities used in an organization's networks
6. Information system insider threat detection models and mitigation technologies
7. Analytical techniques for security across the IT system engineering life-cycle
8. Process Control Systems (PCS) security

Commercialization Office
Technologies/Products/Services
## Sorted by Maritime Security (MS) Capability Gaps
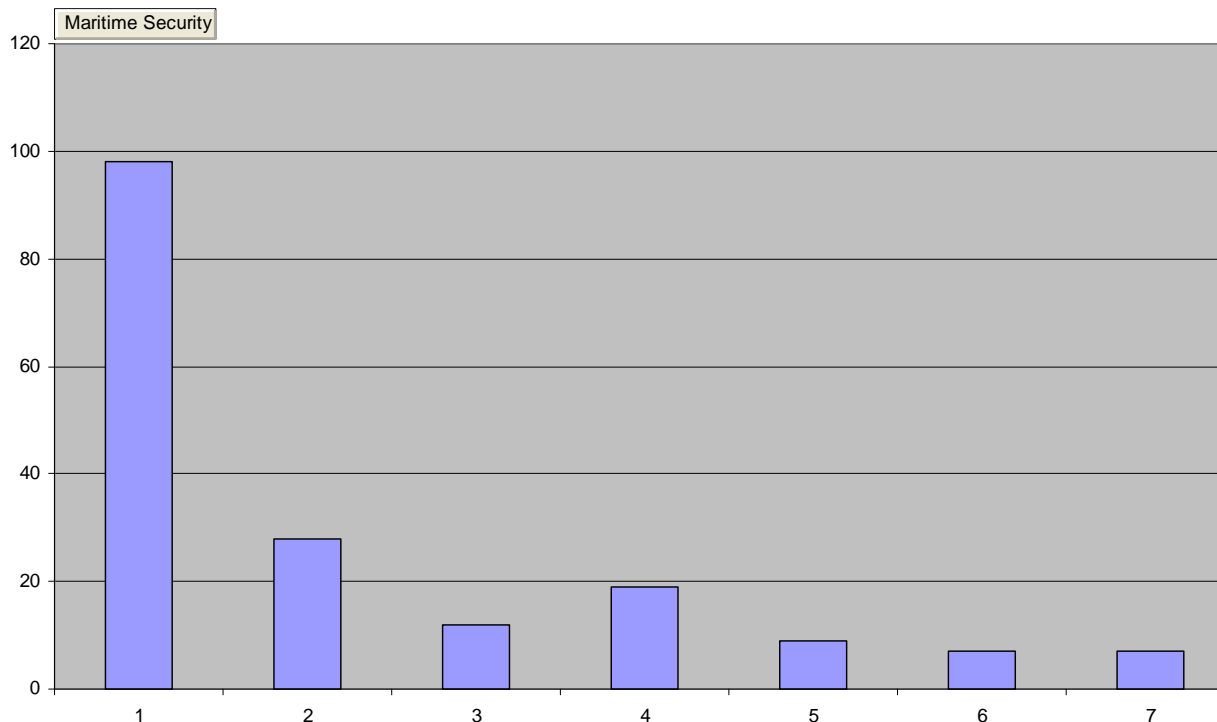
Maritime Security (MS)
1. Wide-area surveillance from the coast to beyond the horizon; port and inland waterways region – detect, ID, and track
2. Data fusion and automated tools for command center operations
3. Vessel compliance through less-lethal compliance methods
4. Enhanced capability to continuously track contraband on ships or containers
5. Improved ballistic personal protective equipment for officer safety
6. Improved WMD detection equipment for officer safety; improved screening capability for WMD for maritime security checkpoints
7. Ability for law-enforcement personnel to detect and identify narcotics, chemical warfare agents, toxic industrial chemicals, explosives, and contraband materials

Commercialization Office
Technologies/Products/Services
## Sorted by Interoperability (INT) Capability Gaps
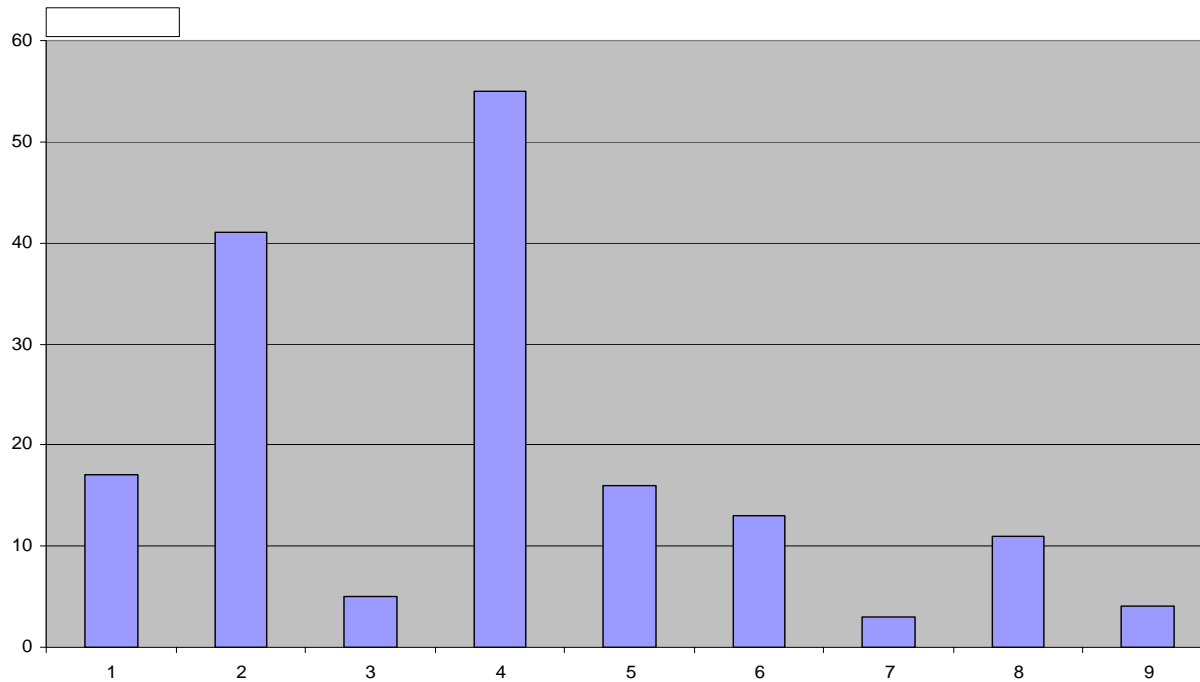
Interoperability (INT)
1. Development and evaluation of Internet Protocol (IP) enabled backbones
2. Standardize, pilot, and evaluate emergent wireless broadband data technologies and applications
3. Acceleration of development and testing of P25 IP-based interfaces
4. Develop message interface standards that enable emergency-information sharing and data exchange
5. Transition of Land Mobile Radios communication architectures to cellular based architectures
6. Evaluation of access technologies
7. Development of the complementary test procedures
8. Provide seamless access to voice and data networks, using a unified communications device
9. Perform interoperability compliance testing on emergency response communications devices and systems

Commercialization Office
Technologies/Products/Services
## Sorted by Counter IED (C-IED) Capability Gaps
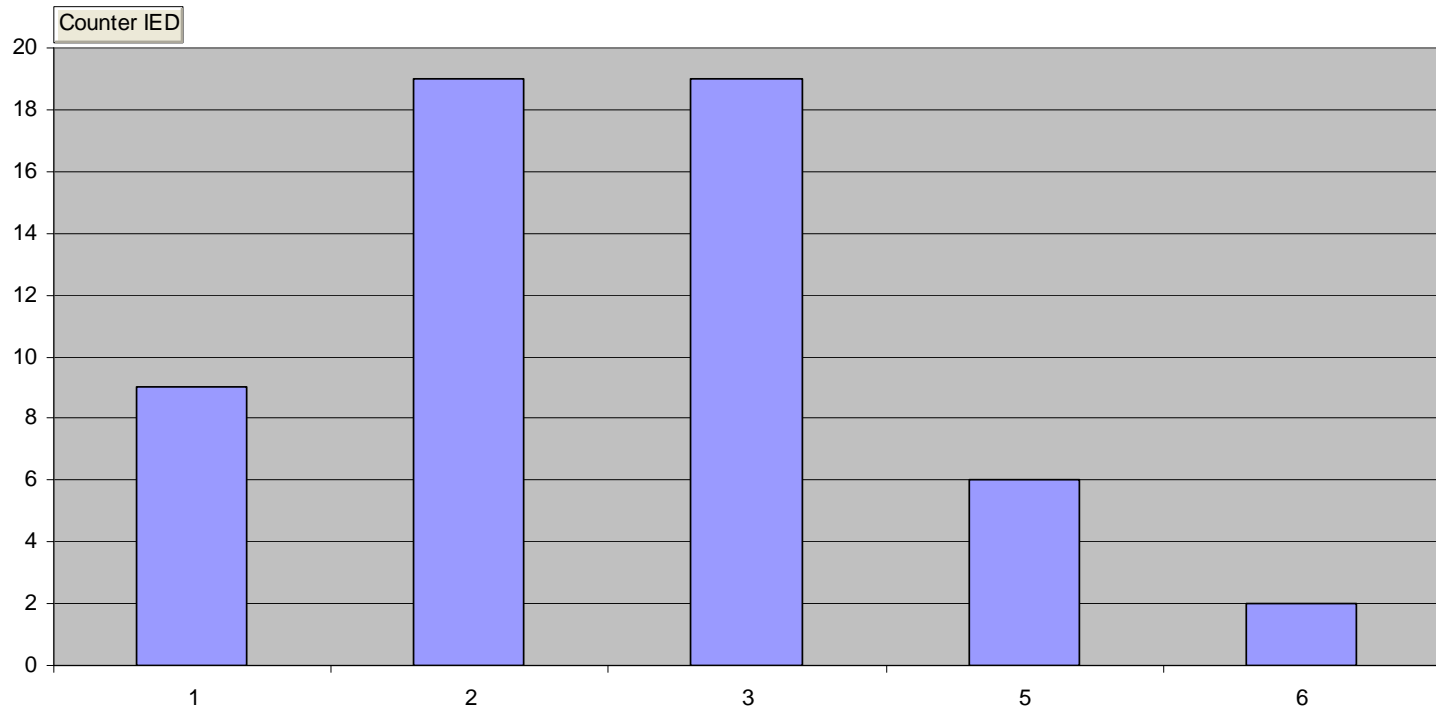
Counter – Improvised Explosive Devices (C-IED)
1. Capability to detect domestic use vehicle borne improvised explosive devices (VBIED)
2. Capability to assess, render sage, and neutralize explosive threats.
3. Capability to detect person-borne IEDs from a stand-off distance
4. Capability to track origin of explosives or bombs and mark explosive material to detect IEDs
5. Protective measures to reduce damage to infrastructure, urban structures, and persons from IRD attacks
6. Tools for blast-mitigation and rapid threat response, assess and stabilize damaged structures
7. Capability to predict the threat of an IED attack, identify person-borne IED threats at checkpoints

Commercialization Office
Technologies/Products/Services
## Sorted by Cargo Security (CS) Capability Gaps
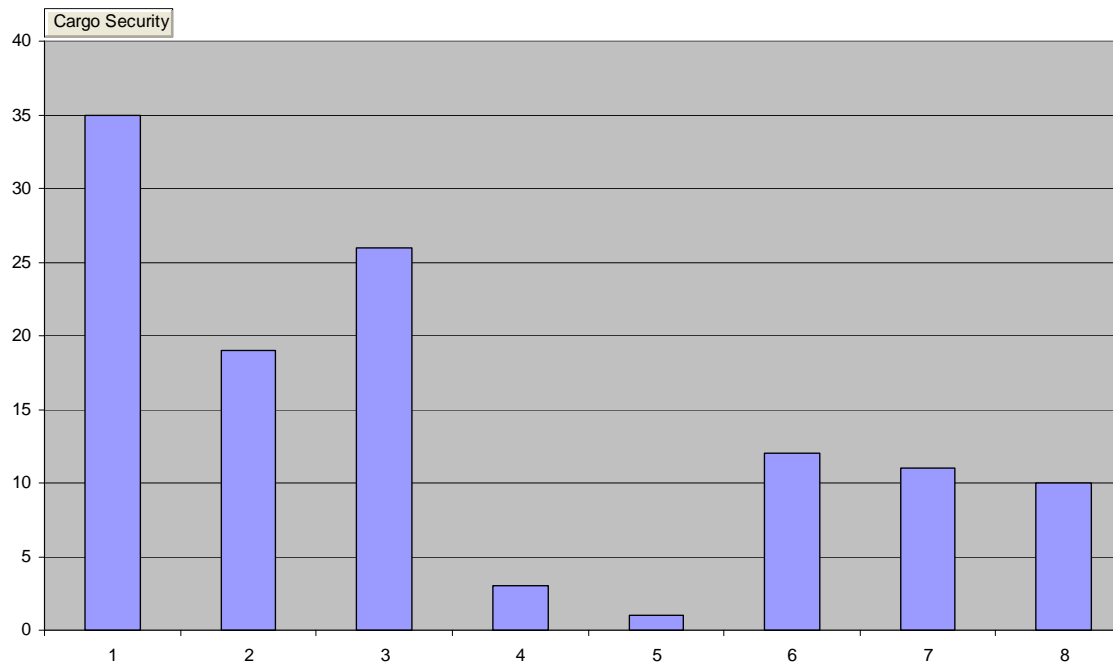
Cargo Security (CS)
1. Enhanced screening and examination by non-intrusive inspection
2. Increased information fusion, anomaly detection, Automatic Target Recognition capability
3. Detect and identify WMD materials and contraband
4. Capability to screen 100% of air cargo
5. Reliable container seal security/detect intrusion devices
6. Track domestic high-threat cargo
7. Harden air cargo conveyances and containers
8. Positive ID of cargo & detection of intrusion or unauthorized access

Commercialization Office
Technologies/Products/Services
## Sorted by Chem/Bio Defense (CBD) Capability Gaps
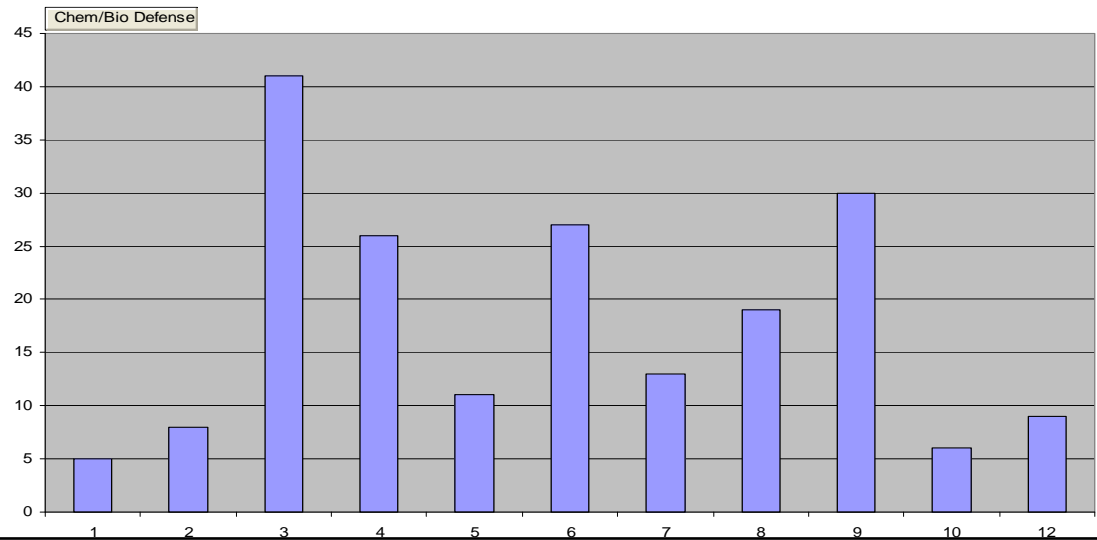
Chem/Bio Defense (CBD)
1. Tools to detect and mitigate animal disease breakouts
2. Policy net assessments to provide fresh perspectives on fundamental elements of the national biodefense strategy
3. Improved tools for integrated CBRN Risk Assessment
4. Incident characterization capability for response & restoration
5. Improved Chem-Bio Forensic Analysis capability
6. National-scale detection architectures and strategies to address outdoor, indoor, and critical infrastructure
7. Consequence assessments of attacks on chemical facilities and Chem-Bio attacks on other critical infrastructure
8. Integrated CBRNE Sensor Reporting capability
9. Handheld rapid biological and chemical detection systems
10. Detection paradigms and systems for improved, emerging, and novel biological threats
11. Mechanisms to independently evaluate and validate commercially developed assays for the first-responder community to be public health actionable
12. Tools for sampling, rapidly detecting, and identifying in the field illegal products, including high-consequence pathogens and toxins that threaten agriculture and the food industry

Commercialization Office
Technologies/Products/Services
Sorted by Transportation Security (TS) Capability Gaps
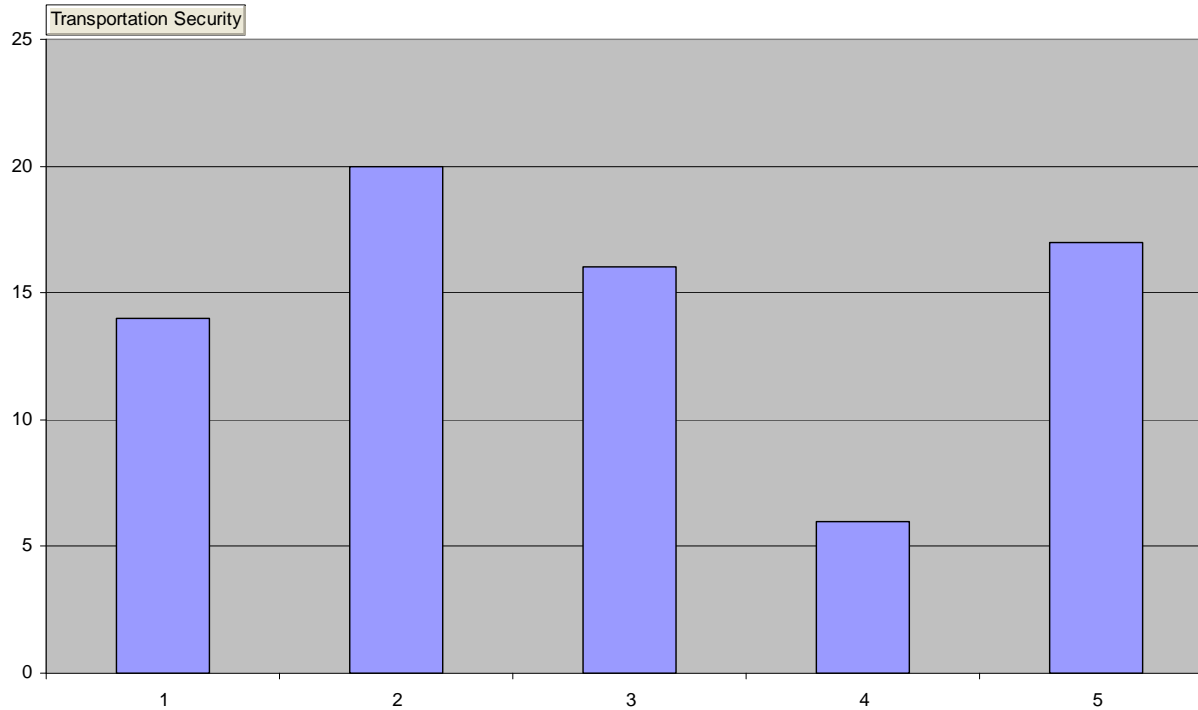

Transportation Security (TS)
1. Technologies to screen people for explosives and weapons at fixed aviation and mass-transit checkpoints
2. System Solutions for explosives detection in checked and carried baggage.
3. Capability to detect homemade or novel explosives
4. Optimized canine explosive detection capability
5. Technologies for screening air cargo for explosives and explosive devices

Commercialization Office
Technologies/Products/Services
## Sorted by Incident Management (IM) Capability Gaps
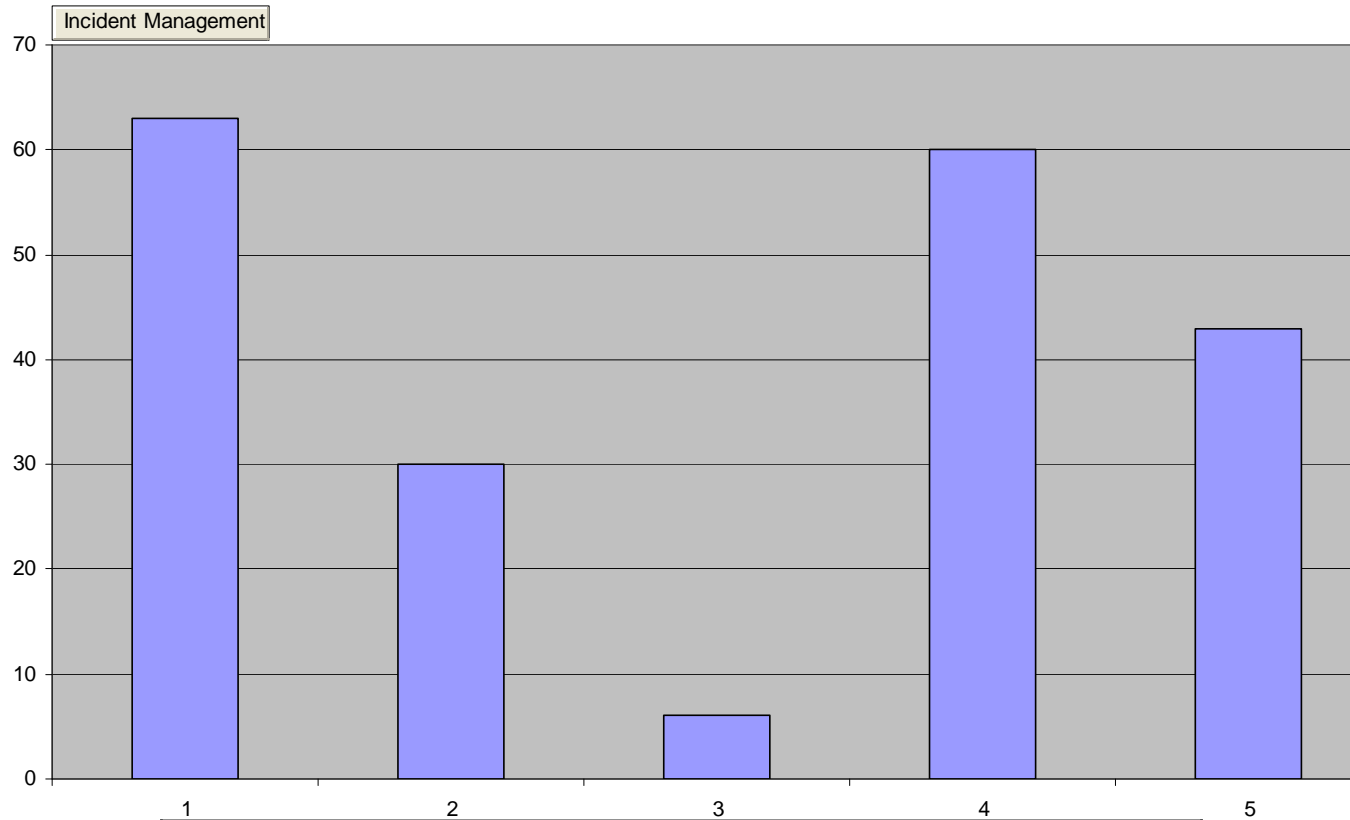
Incident Management (IM)
1. Integrated Modeling, Mapping, and Simulation capability
2. Personnel Monitoring (Emergency Responder 3-D Locator System) capability
3. Personnel Monitoring (Physiological Monitoring of Firefighters) capability
4. Incident Management Enterprise System
5. Logistics management tool

Commercialization Office
Technologies/Products/Services
## Sorted by Infrastructure Protection (IP) Capability Gaps
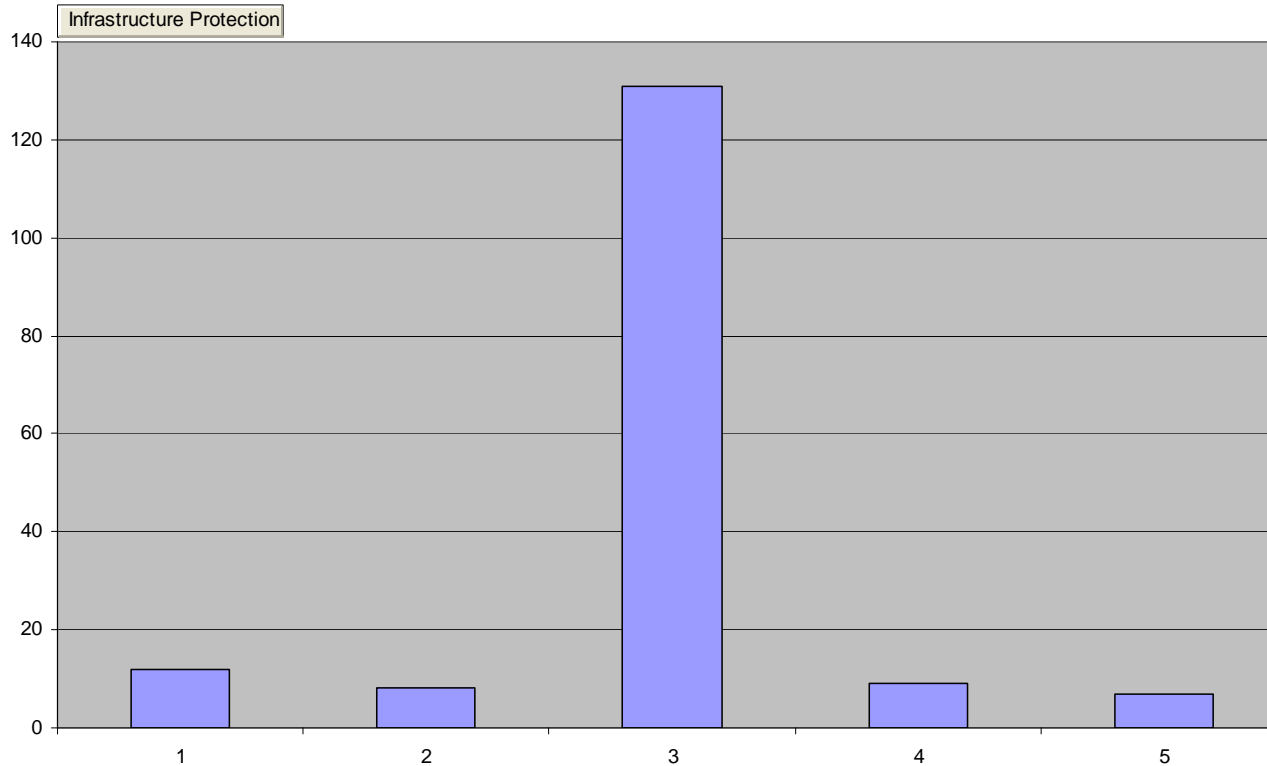
Infrastructure Protection (IP)
1. Analytical tools to qualify interdependencies and cascading consequences as disruptions occur across critical infrastructure sectors
2. Effective and affordable blast analysis and protection for critical infrastructure; improved understanding of blast failure mechanisms and protection measures for the most vital CI/KR
3. Advanced, automated and affordable monitoring and surveillance technologies
4. Rapid mitigation and recovery technologies to quickly reduce the effect of natural and manmade disruptions and cascading effects
5. Critical utility components that are affordable, highly transportable, and provide robust solutions during manmade and natural disruptions

Commercialization Office
Technologies/Products/Services
## By Border Security (BS) Capability Gaps
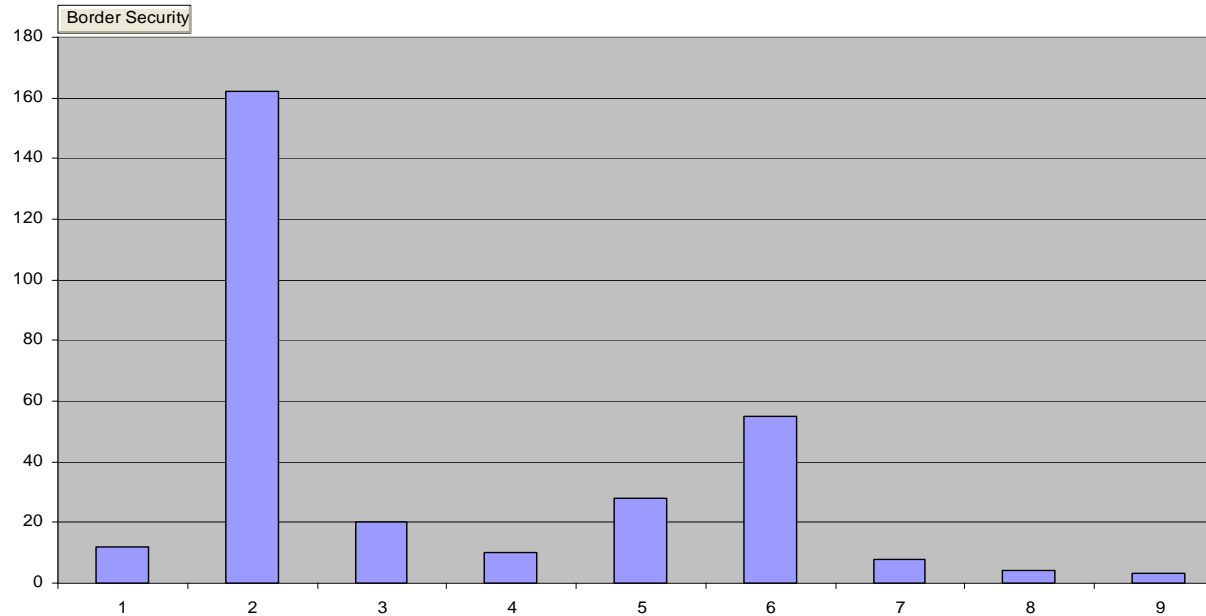
Border Security (BS)
1. Improved ballistic protection via personal protective equipment
2. Improve detection, tracking and identification of all threats along the terrestrial and maritime border
3. Ability to access ICE database in which voice information is entered; provide analytical, reporting, and automated case deconfliction; classify, identify voice samples
4. Non-lethal compliance measures for vehicles, vessels, or aircraft allowing for safe interdiction by law enforcement personnel
5. Non-destructive tools that allow for the inspection of hidden or closed compartments to find contraband or security threats
6. Improved analysis and decision-making tools that will ensure the development/ implementation of border security initiatives
7. Ability to non-intrusively determine the intent of subjects during questioning
8. Ability for Law Enforcement personnel to quickly identify the origin of gunfire and classify the type of weapon fired
9. Ability for Law Enforcement officers to assure compliance of lawful orders using non-lethal means

Commercialization Office
Technologies/Products/Services
Sorted by Information Sharing (IS) Capability Gaps
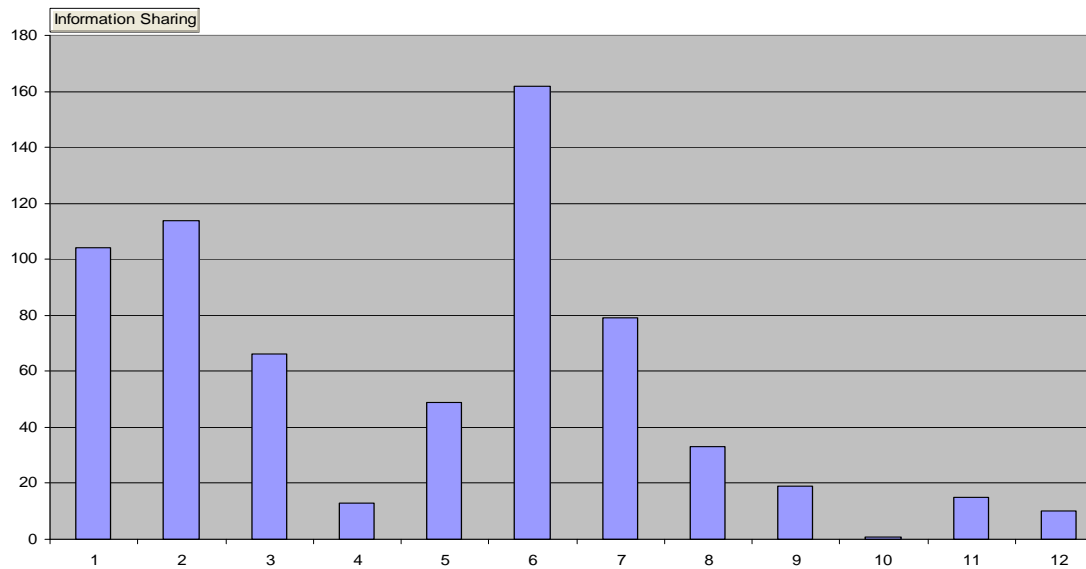
Information Sharing (IS)
1. Data fusion from law enforcement, intelligence partners, and other sensors to support the Common Operation Picture (COP)
2. Improved real-time data sharing of law enforcement information
3. Management of user identities, rights, and authorities
4. Distribution of Intelligence Products
5. Information sharing within/across sectors on terrorists threats
6. Improvement of situational awareness and decision support – automated, dynamic, real-time data processing and visualization capability.
7. Analytic capabilities for structured, unstructured, and streaming data
8. Situational awareness between US Coast Guard and partners
9. Sensor fusion between Law Enforcement and Intelligence partners
10. Predictive analytics – correlate data and information for recognizing and potentially predicting terrorist attack patterns
11. Protection of U.S. citizen personal data
12. Improved cross-agency reporting of suspicious data

Summary and Next Steps

- There are well over 250 organizations (with more than 1,400 products/technologies/services) aligned to individual capability gaps generated in Capstone IPT process.

- Also provided information on an organization's "core competencies" versus needs of a given DHS Operating Component.

- Drilled down into data to provide in-depth analysis of each product/technology/service of a given company/organization portfolio versus individual Capstone IPT generated capability gap(s).

- Work even closer with Transition Managers to validate alignment to DHS capability gaps.

- Developing strategies to reach out to under-represented/under-utilized types of businesses to aid the Department.

- Continue to socialize and publicize awareness of this valuable data throughout the Department.

- Refine and/or customize reports for Operating Components, if required.

- Designing a process to automate and capture Private Sector statistics and company information.

U.S. DEPARTMENT OF HOMELAND SECURITY

Homeland Security